

# CLAIMS

What is claimed is:

- Sub 5  
A4
1. A method for storing at least one content object having a plurality of content entities in a data repository, comprising the steps of:

For each content object,

10                    Storing as a file object a list of content entity identifiers defining the content of  
                      the content object, and  
                      Storing ones of the plurality of content entities as a plurality of file objects, each  
                      file object containing one content entity.

15                    2. The method of claim 1, further comprising the step of creating an attribute table in the  
                      data repository for storing an attribute pertaining to at least one of content objects or content  
                      entities.

20                    3. The method of claim 2, further comprising the step of creating a row for each content  
                      object in the attribute table, the row containing at least one attribute pertaining to the content  
                      entity.

25                    4. The method of claim 2, further comprising the step of creating a row for each content  
                      entity in the attribute table, the row containing at least one attribute pertaining to the content  
                      entity.

5. The method of claim 2, wherein at least one attributes is extracted from the content  
object.

6. The method of claim 1, wherein ones of the content entities further comprise components associated with the content object, and further comprising the step of storing each associated component as a file object.

5 7. The method of claim 1, wherein the content object is one of a book, a collection of images, an album, and a video.

8. The method of claim 1, wherein the content object is a book and ones of the content entities are one of volumes, chapters or sections.

9. The method of claim 1, wherein the content object is a compilation of content.

10. The method of claim 4, wherein at least one of the associated components comprises an image.

11. A method for storing at least one hierarchically structured content object having a plurality of content entities in a data repository, comprising the steps of:

For each content object,

Storing as a file object an outline of containers and content entity identifiers defining the content and hierarchy of the content object, and

Storing ones of the plurality of content entities as a plurality of file objects, each file object containing one content entity.

12. The method of claim 11, further comprising the step of creating an attribute table in the data repository for storing an attribute pertaining to at least one of content objects or content entities.

13. The method of claim 12, further comprising the step of creating a row for each content object in the attribute table, the row containing at least one attribute pertaining to the content entity.

5 14. The method of claim 12, further comprising the step of creating a row for each container in the attribute table, the row containing at least one attribute pertaining to the container.

10 15. The method of claim 12, further comprising the step of creating a row for each content entity in the attribute table, the row containing at least one attribute pertaining to the content entity.

16. The method of claim 12, wherein at least one attributes is extracted from the content object.

15 17. The method of claim 11, wherein ones of the content entities further comprise components associated with the content object, and further comprising the step of storing each associated component as a file object.

20 18. The method of claim 11, wherein the content object is one of a book, a collection of images, an album, and a video.

19. The method of claim 11, wherein the content object is a book and ones of the content entities are one of volumes, chapters or sections.

25 20. The method of claim 11, wherein the content object is a book and ones of the containers are one of books, volumes or chapters.

21. The method of claim 11, wherein the content object is a compilation of content.

22. The method of claim 14, wherein at least one of the associated components comprises an image, a video segment or an audio segment.

23. A method for retrieving a content object from a data repository, the content object being stored as a file object containing an ordered list of content entity identifiers defining the content of the content object, and a plurality of content objects, each containing a content entity, comprising the steps of:

Retrieving the file object containing the list of content entity identifiers;

For each content entity identifier, retrieving the file object corresponding to the identified content entity; and

Inserting the content entity into the ordered list at the location of its content entity identifier.

24. A method for constructing a content object, the contents of the content object being defined by an ordered list of content entity identifiers identifying one or more content entities stored in a data repository, comprising the steps of:

For each content entity identifier, retrieving the file object corresponding to the identified content entity; and

Inserting the content entity into the ordered list at the location of its content entity identifier.

25. The method of claim 24, further comprising the steps of:

Assigning an identifier to the content object; and

Assigning new content entity identifiers to the content entities, the new identifiers including the identifier assigned to the content object.

26. A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform method steps for storing at least one content object having a plurality of content entities in a data repository, comprising the steps of:

5 For each content object,

Storing as a file object a list of content entity identifiers defining the content of the content object, and

10 Storing ones of the plurality of content entities as a plurality of file objects, each file object containing one content entity.

27. The method of claim 26, further comprising the step of creating an attribute table in the data repository for storing an attribute pertaining to at least one of content objects or content entities.

28. The method of claim 27, further comprising the step of creating a row for each content object in the attribute table, the row containing at least one attribute pertaining to the content entity.

29. The method of claim 27, further comprising the step of creating a row for each content entity in the attribute table, the row containing at least one attribute pertaining to the content entity.

30. The method of claim 27, wherein at least one attributes is extracted from the content object.

31. The method of claim 26, wherein ones of the content entities further comprise components associated with the content object, and further comprising the step of storing each associated component as a file object.

32. The method of claim 26, wherein the content object is one of a book, a collection of images, an album, and a video.

33. The method of claim 26, wherein the content object is a book and ones of the content entities are one of volumes, chapters or sections.

34. The method of claim 26, wherein the content object is a compilation of content.

35. The method of claim 29, wherein at least one of the associated components comprises an image, a video segment or an audio segment.

36. A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform method steps for storing at least one hierarchically structured content object having a plurality of content entities in a data repository, comprising the steps of:

For each content object,

Storing as a file object an outline of containers and content entity identifiers defining the content and hierarchy of the content object, and

Storing ones of the plurality of content entities as a plurality of file objects, each file object containing one content entity.

37. The method of claim 36, further comprising the step of creating an attribute table in the data repository for storing an attribute pertaining to at least one of content objects or content entities.

38. The method of claim 37, further comprising the step of creating a row for each content object in the attribute table, the row containing at least one attribute pertaining to the content entity.

39. The method of claim 37, further comprising the step of creating a row for each container in the attribute table, the row containing at least one attribute pertaining to the container.

40. The method of claim 37, further comprising the step of creating a row for each content entity in the attribute table, the row containing at least one attribute pertaining to the content entity.

41. The method of claim 37, wherein at least one attributes is extracted from the content object.

42. The method of claim 36, wherein ones of the content entities further comprise components associated with the content object, and further comprising the step of storing each associated component as a file object.

43. The method of claim 36, wherein the content object is one of a book, a collection of images, an album, and a video.

44. The method of claim 36, wherein the content object is a book and ones of the content entities are one of volumes, chapters or sections.

45. The method of claim 36, wherein the content object is a book and ones of the containers are one of books, volumes or chapters.

46. The method of claim 36, wherein the content object is a compilation of content.

47. The method of claim 42, wherein at least one of the associated components comprises an image.

48. A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform method steps for retrieving a content object

from a data repository, the content object being stored as a file object containing an ordered list of content entity identifiers defining the content of the content object, and a plurality of content objects, each containing a content entity, comprising the steps of:

- 5           Retrieving the file object containing the list of content entity identifiers;  
          For each content entity identifier, retrieving the file object corresponding to the identified content entity; and  
          Inserting the content entity into the ordered list at the location of its content entity identifier.

10           49.    A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform method steps for constructing a content object, the contents of the content object being defined by an ordered list of content entity identifiers identifying one or more content entities stored in a data repository, comprising the steps of

15                   For each content entity identifier, retrieving the file object corresponding to the identified content entity; and  
                  Inserting the content entity into the ordered list at the location of its content entity identifier.

20           50.    The method of claim 49, further comprising the steps of:

          assigning an identifier to the content object; and  
          assigning new content entity identifiers to the content entities, the new identifiers  
25   including the identifier assigned to the content object.

51.    A system for storing at least one content object having a plurality of content entities in a data repository, comprising:



Means for storing, as a file object, a list of content entity identifiers defining the content of the content object, and

Means for storing ones of the plurality of content entities as a plurality of file objects, each file object containing one content entity.

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52. The system of claim 51, further comprising means for creating an attribute table in the data repository for storing an attribute pertaining to at least one of content objects or content entities.

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53. The system of claim 52, further comprising means for creating a row for each content object in the attribute table, the row containing at least one attribute pertaining to the content entity.

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54. The system of claim 52, further comprising means for creating a row for each content entity in the attribute table, the row containing at least one attribute pertaining to the content entity.

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55. The system of claim 52, wherein at least one attributes is extracted from the content object.

56. The system of claim 51, wherein ones of the content entities further comprise components associated with the content object, and further comprising means for storing each associated component as a file object.

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57. The system of claim 51, wherein the content object is one of a book, a collection of images, an album, and a video.

58. The system of claim 51, wherein the content object is a book and ones of the content entities are one of volumes, chapters or sections.

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59. The system of claim 51, wherein the content object is a compilation of content.

60. The system of claim 54, wherein at least one of the associated components comprises an image, a video segment or an audio segment.

61. A system for storing at least one hierarchically structured content object having a plurality of content entities in a data repository, comprising:

Means for storing an outline of containers and content entity identifiers for each content object, the outline being stored as a file object and defining the content and hierarchy of the content object, and

Means for storing ones of the plurality of content entities as a plurality of file objects, each file object containing one content entity.

62. The system of claim 61, further comprising means for creating an attribute table in the data repository for storing an attribute pertaining to at least one of content objects or content entities.

63. The system of claim 62, further comprising means for creating a row for each content object in the attribute table, the row containing at least one attribute pertaining to the content entity.

64. The system of claim 62, further comprising means for creating a row for each container in the attribute table, the row containing at least one attribute pertaining to the container.

65. The system of claim 62, further comprising means for creating a row for each content entity in the attribute table, the row containing at least one attribute pertaining to the content entity.

66. The system of claim 62, wherein at least one attribute is extracted from the content object.

67. The system of claim 61, wherein ones of the content entities further comprise components associated with the content object, and further comprising means for storing each associated component as a file object.

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68. The system of claim 61, wherein the content object is one of a book, a collection of images, an album, and a video.

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69. The system of claim 61, wherein the content object is a book and ones of the content entities are one of volumes, chapters or sections.

70. The system of claim 61, wherein the content object is a book and ones of the containers are one of books, volumes or chapters.

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71. The system of claim 61, wherein the content object is a compilation of content.

72. The system of claim 64, wherein at least one of the associated components comprises an image, a video segment or an audio segment.

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73. A system for retrieving a content object from a data repository, the content object being stored as a file object containing an ordered list of content entity identifiers defining the content of the content object, and a plurality of content objects, each containing a content entity, comprising:

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Means for retrieving the file object containing the list of content entity identifiers;  
Means for retrieving the file object corresponding to each content entity identifier; and  
Means for inserting the content entity into the ordered list at the location of its content entity identifier.

74. A system for constructing a content object, the contents of the content object being defined by an ordered list of content entity identifiers identifying one or more content entities stored in a data repository, comprising:

5 Means for retrieving the file object corresponding to each content entity identifier; and  
Means for inserting the content entity into the ordered list at the location of its content entity identifier.

75. The system of claim 74, further comprising:

10 Means for assigning an identifier to the content object; and  
Means for assigning new content entity identifiers to the content entities, the new identifiers including the identifier assigned to the content object.

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